On Monday, the 23d, both associations settled down to work. At the morning session of the Historical association a most valuable paper was presented by Judge Mellen Chamberlain of Boston, on "The constitutional relations of the American colonies to the English government at the commencement of the American revolution." Judge Chamberlain's argument was purely legal, and called forth from Professor Johnston of Princeton a few remarks on the relation of the legal to the political argument in considerations of this sort. The other papers of this session were 'Historical grouping,' by James Schouler; 'Diplomatic prelude to the seven-years' war,' by H. E. Mills; and 'Silas Deane,' by Charles Isham.

The corresponding session of the Economic association was devoted to the transportation problem, and developed many points of interest. The standing committee on transportation presented a report which indicated the plan of the work to be undertaken. Professor James of Philadelphia gave an historical *résumé* of the agitation for national regulation of the railways in the United States, and a notice of the Windom report of 1873, and the Cullum report of 1886. The interstate commerce bill he regarded as tentative, but as a step in the right direction.

Dr. Seligman of Columbia followed with the most valuable paper of the session, on the 'Long and short haul clauses of the federal railway law.' Dr. Seligman entered minutely into the subject of railway charges, and explained carefully and clearly the phrase 'what the traffic will bear.' After showing the difference between differential and preferential rates, the speaker defended the former on grounds of public policy, while heartily condemning the latter. Dr. Seligman was very emphatic in his assertion, and very clear in his proof, that the charge for railway service should be based, not on its cost, but on its value. From this principle follow classification and discrimination. Dr. Seligman concluded, "Under a system of free competition among private railways, the principle of volume of service, or charging what the traffic will bear, is the only rational method calculated to give the most efficient service and greatest profits. But the existence or possibility of the abuse of power requires the restriction of this unlimited liberty in the public interest. The reconciliation of the railways and public interest can take place only through the interposition of public authority. The public authority must lay down the rule of equal treatment as the fundamental doctrine, but must recognize the principle of value as a reason for departing from the doctrine in individual cases. Omission of either duty necessarily entails injustice or inefficiency." Simon Sterne, Esq., followed with a paper on European railroads, and an animated discussion ensued, participated in by Professor Hadley of Yale, Simon Sterne, and Edward Atkinson of Boston.

In the afternoon both associations were entertained at Wellesley college by the faculty and students of that institution. At the evening session of the Economic association, Mr. Franklin H. Giddings, editor of *Work and wages*, offered a philosophical paper on the 'Sociological character of political economy.' Hon. John Jay read before the Historical association an essay on the 'Peace negotiations of 1783,' Dr. H. B. Adams gave an interesting account of Ranke's personality and work, and Dr. Francke of Harvard discussed the 'Parliamentary experiment in Germany.'

HEALTH MATTERS.

MOUNTAIN-CLIMBING. — Dr. L. Barkan of Brooklyn has contributed an article to the *New York medical journal* on the advantages of mountain-climbing. He regards the pure mountain air as one of the best of disinfecting agents. He says there are floating in the air numberless germs, many of them of a harmful nature; and it would seem possible that the injurious germs which, especially in large places, are received into the human organism, might be rendered innocuous by the oxygen of the air, and perhaps also by air-currents acting in a mechanical way, while in stagnant air — as, for example, in a badly ventilated apartment, where the exhalations from the lungs and skin are constantly accumulating — there is less disinfectant action because of the diminished quantity of oxygen. The best inhalation apparatus, baths, and medicaments, are of but temporary value, if no compensation is made for the loss of vitality and of muscular tone, especially that of the heart and vessels; if the blood stasis in the glands and other organs does not yield to an increased flow of blood in the arteries and veins; if the thinned blood does not become thicker and more rich in albumen; if the accumulating carbonic acid is not expelled by a more plentiful supply of oxygen; if the fat deposited in the body is not more rapidly oxidized; and if the kidneys are not made to act more efficiently. All these effects are produced, according to Jacobi, Loomis, Veit, Oertel, and other authorities, more certainly and more generally by mountain-climbing than in any other way whatever. After several weeks spent in mountain excursions, the condition of the patient is radically changed for the better. There is an elasticity of the mental processes in place of the former hebetude; will, thought, and impulse seem to move on wings; the

formerly dull senses are sharpened; the formerly half-closed eyes sparkle, and the flabby cheeks become fuller and rosy; the formerly prominent abdomen is reduced to more seemly dimensions, notwithstanding that food and drink are taken with greater relish; and the chest is expanded. Dr. Barkan thinks the European mountains are to be preferred to those of America, principally on the ground that better paths are provided. He makes an exception to this rule in favor of the Adirondacks and some other mountains in the eastern states. In organizing mountain-parties, every thing should, so far as possible, be previously arranged. Regulations should be established as to the gradual increase in the extent of the daily ascents, the periods of rest, the protection of the feet and other parts of the body against chafing and the formation of blisters. The advice of Dr. Barkan will be found by inexperienced pedestrians to be of great value, and we should advise those who contemplate mountain-climbing during the coming summer to familiarize themselves with his rules of action, and thus save time and avoid suffering.

THE STOMACH. — Dr. A. H. P. Leuf, in an article in the *Medical news* on the stomach, calls attention to several important errors in the anatomy and physiology of that organ as described by most of the authorities. He finds, as the result of many post-mortem and other examinations, that instead of lying in a horizontal position, the stomach in its normal position is vertical, and that when it is distended the lesser curvature remains comparatively stationary, while the greater moves to the left and downward, and the pouch upward and to the left. An empty stomach is in a contracted condition, and assumes a tubular form: gaseous distention, though frequently found, is not the rule, nor is it strictly physiological. When water is taken into the full or partly full stomach, it does not mingle with the food, as we are generally taught, but passes along quickly between the food and the lesser curvature, towards the pylorus, through which it passes into the intestine. The secretion of mucus by the lining membrane is constant, and during the night a considerable amount accumulates in the stomach: some of its liquid portion is absorbed, and that which remains is thick and tenacious. If food is taken into the stomach when in this condition, it becomes coated with this mucus, and the secretion of the gastric juice and its action are delayed. These facts show the value of a goblet of water before breakfast. This washes out the tenacious mucus, and stimulates the gastric glands to secretion. In old or feeble persons, water should not be taken cold, but it may be with great advantage then taken warm or hot. This removal of the accumulated mucus from the stomach is probably one of the reasons why taking soup at the beginning of a meal has always been found so beneficial. Dr. Leuf sums up his views as follows: 1°. The position of the stomach is more nearly vertical than horizontal; 2°. An empty stomach, if in good tone, is always tubular; 3°. A tubular stomach should be the rule on rising; 4°. Non-irritating liquids pass directly through the tubular stomach; 5°. They do likewise if the stomach contains food, and in such cases pass along the lesser curvature; 6°. The morning mucus contained in the stomach hinders or retards digestion; 7°. Water drank before meals dilutes and washes out this mucus, stimulates the gastro-enteric tract to peristalsis, and causes hyperaemia of its lining membrane, thus greatly aiding digestion as well as elimination; 8°. Cold water should be given to those who have the power to react, while warm or hot water must be administered to all others; 9°. Salt added to the water is very beneficial in preventing the formation of unabsorbable parapeptones; 10°. It is perfectly proper to drink water before, during, and after meals.

CETTI'S FAST. — M. Cetti, who began a fast of thirty days at Berlin, maintained it but two weeks, having been assured that a longer deprivation would be of no scientific value. During the fast he was under the observation of such scientific men as Virchow and Senator; and the results, when published, will undoubtedly be of great interest. He drank all the water he desired, and was permitted to smoke cigarettes. His average daily loss in weight was 585 grams. Accurate measurements of the body were taken, and minute analyses of the excreta made from time to time: also examinations of the blood and sphygmographic tracings of the pulse. Estimations were also made of the amounts of oxygen absorbed, and of carbonic acid produced, during respiration.

WATER-SUPPLY AND TYPHOID-FEVER. — Dr. Charles Smart, surgeon U.S.A., regards the water-supply as the principal medium of the transmission of typhoid-fever, and refers to the statistics of New Orleans and Philadelphia as sustaining his views. In the former city, without a sewer system, the drinking-water is pure rain-water; while in Philadelphia, with a sewer system, the water-supply is contaminated. The death-rate per 100,000, from typhoid-fever in New Orleans, in 1866 was 68, and in 1885 but 16; the average for the first decade, 1866–76, being 41.3, and for the second, 24.6, a decrease of nearly 17. In Philadelphia the average for the first decade was

55.8, and for the second, 66.1, an increase of nearly 11. In considering these statistics, it would seem that the transmission of typhoid-fever by means of sewers is overlooked. In Brooklyn the outbreak of 1885 was distinctly traced to communication through sewers, and it was also fairly well demonstrated that the water-supply played no part at all in the transmission of the disease. The fact is undoubtedly that typhoid-fever is communicated both by means of sewers and the water-supply, and that neither is to be regarded as the sole factor in its propagation.

PASTEUR'S WORK. — Pasteur is at the present time being very severely criticised by his opponents, some charging him with causing the death of his patients by his inoculation experiments. The following table of statistics, taken from the *Lancet*, would seem to indicate, that, notwithstanding the adverse criticisms, Pasteur's claims to having saved life are established on a substantial basis.

	No. of cases treated.	Deaths from all causes.	Mortality.
Paris	2,730	45	Under 2 per cent
Odessa	325	12	„ 4 „
St. Petersburg	118	1	„ 1 „
Moscow	112	2	„ 2 „
Vienna	96	0	–
Warsaw	84	0	–
Naples	48	0	–
Samara	47	2	Under 5 per cent
	3,560	62	Under 2 per cent

These statistics include those treated up to the close of 1886. Since then, twelve or fifteen more deaths have occurred, making the total mortality less than 80, or 2¼ per cent. In contrast with this, we find the rate of mortality after bites of rabid animals to be about 16 per cent; or, in other words, the treatment pursued by Pasteur and those who have practised his method elsewhere, has been followed by but one death, while without the treatment there would have been seven deaths, per thousand.

GEOGRAPHICAL DISTRIBUTION OF CONSUMPTION. — The New Sydenham society has recently published the third volume of Hirsch's 'Handbook of geographical and historical pathology,' in which the author treats of pulmonary phthisis. He finds the disease to be one of all times, countries, and races. Its mortality is 3 per 1,000, or nearly one-seventh of the total mortality. In Vienna the rate is 7.7 per 1,000; in Berlin and Dresden, but 3.8. Among nomad tribes, the Kirghiz of Central Asia and the Bedouins of Arabia, phthisis is almost unknown. When, however, these tribes change their abodes and dwell in towns, then the disease appears among them. The conclusions of Professor Hirsch are as follows: 1°. Phthisis is everywhere prevalent, but it is rare in polar regions, and rarer still at high altitudes; 2°. The main factors in its production are over-crowding and bad hygiene; 3°. Heat and cold, *per se*, have no influence: 4°. Damp, when conjoined with frequent oscillations of temperature, predisposes to the disease, but humidity of the air is less important than dampness of soil; 5°. Occupation is extremely important, but mainly indirectly, as tending to good or bad hygienic conditions.

WHOOPING-COUGH. — At the sixth German congress for internal medicine, held at Wiesbaden in April, the subject of whooping-cough was discussed. Professor Vogel of Munich regards the disease as infectious. In an epidemic which occurred at Wurzburg, 52 children under one year of age were affected, and 13, or 25 per cent. died; 248 between one and five years were also affected. Of this latter number, 12, or 4 8 per cent, died; while between the ages of six and fifteen years there were 87 cases, of which but one case, or 1.1 per cent, was fatal. Professor Hagenbach of Basle said that 240,000 children in Germany have this disease annually; the mortality being, on the average, four or five per cent. He regards it as communicable so long as much mucus is produced. Schools should be most carefully watched, and children who have paroxysmal coughs should be excluded; and, if the disease occurs and spreads, the schools should be closed. The moving of children from place to place for change of air is often the cause of an epidemic in places free from the disease.

MENTAL SCIENCE.

Para-psychology.

WHEN, through disease of the nerves or the action of drugs, the sense-organs lose their sensibility, the state thus produced is called 'anaesthesia;' when, for similar reasons, their activity is unduly heightened, the condition is spoken of as 'hyperaesthesia;' and when the abnormality of sensation consists in the production of unusual effects by ordinary stimuli (for example, when every touch is regarded as the creeping of an ant